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COMPILED BY

J. P. HARDING, Ph.D.

AND

R. W. INGLE

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I.—TITLES

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Opinion 534. Emendation under the Plenary Powers to *Conchoecia* of the generic name *Conchoecia* Dana (J.D.), 1849, and designation under the same Powers of a type species in harmony with accustomed usage for the genus so named. *Opin. int. Comm. zool. Nom.* 20 (1) : 1-12.

Opinion 553. Addition of the generic name *Cyzicus* Audouin, 1837 . . . to the *Official List of Generic Names in Zoology* and matters incidental thereto. *Opin. int. Comm. zool. Nom.* 20 (20) : 225-240.

Opinion 559. Determination of the gender to be attributed to six generic names in the Class Crustacea (Order Decapoda) and addition of the names concerned to the *Official List of Generic Names in Zoology*. *Opin. int. Comm. zool. Nom.* 20 (26) : 283-292.

Opinion 564. Suppression under the Plenary Powers of the specific name *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*, and designation under the same powers of *Palaemon adspersus* Rathke, 1837, to be the type species of the genus *Palaemon* Weber, 1795, and matters incidental thereto (Class Crustacea, Order Decapoda). *Opin. int. Comm. zool. Nom.* 20 (31) : 339-358.

Opinion 570. Designation under the Plenary Powers of a type-species in harmony with the existing usage for the nominal genus *Indiana* Matthew, 1902 (Class Crustacea, Order Ostracoda). *Bull. zool. Nom.* 17 (3-5) : 95-105.

Opinion 578. Use of the Plenary Powers to validate a neotype for the nominal species *Cancer oculatus* O. Fabricius, 1780, and to designate that species as the type-species of the nominal genus *Mysis* Latreille, [1802-1803] (Class Crustacea, Order Mysidacea). *Bull. zool. Nom.* 17 (3-5) : 143-640.

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Methods.—Marine aquaria, PIECZONKA, G. ; Zooplankton counts, BOSSANYI, J. ; CARRIE, B. G. A. ; Plankton, sampling, CASSIE, R. M. (1) ; Lake bottom fauna, MONAKOV, A. V. & MORDUKHAI-BOLTOVSKOI, E. D. ; Radioisotopes and feeding of marine animals, CHIPMAN, W. A. ; Oxygen consumption apparatus, WOYNÁROVICH, E. (1) ; Laboratory culture of *Pagurus*, COFFIN, H. G. (1) ; Gammaridae, LUKASOVICS, F. ; *Artemia* for *Hydra* cultures, BRADDOCK, J. C. ; Axenic culture of *Artemia*, PROVASOLI, L. & SHIRAIISHI, K. ; Daphnia culture, ALI, M. A. ; *Streptocephalus*, MOORE, W. G. (1) ; Rearing *Emerita* larvae, REES, G. H. ; Control of *Argulus*, GRAAF, F. de ; "Host factor" study, DAVENPORT, D. ; Stratigraphic methods, GUBLER, Y.

Museums and Institutions.—Catalogue of Cirripedia in Monaco Museum, BELLOC, G. ; Catalogue Mysidacea Musée Oceanographique, BELLOC, G. (2).

Obituaries.—C. R. Shoemaker, SCHMITT, W. L. ; Richard Wolterreck, BREHM, V. (4).

Bibliography.—Pre-Linnean Carcinology, HOLTHUIS, L. B. (7) ; Oniscoidea of Belgium, POLK, P. ; Catalogue of ostracods, ELLIS, B. F. & MESSINA, A. R. ; New genera and species of ostracod, LEVINSON, S. A.

STRUCTURE

Functional morphology, Arthropoda, MANTON, S. M.

General Anatomy.—Syncarida, SIEWING, R. (2) ; Crustacea, KAESTNER, A.

Integument.—Permeability shell bases in *Balanus*, ARBUZOVA, K. S.; Wall plates of Barnacles, CORNWALL, I. E.; *Balanus* shell growth, COSTLOW, D. J.; Chitin in decomposing zooplankton, KRAUSE, H. R.; *Scalpellum*, tegumental glands, MAHMOUD, M. F.

Appendages.—Mouthparts *Jaera*, LEMERCIER, A.; First leg segments, CARPENTIER, F. & BARLET, J.

Nervous system.—Brain topography, DAHL, E.

Sense organs.—*Triops*, DAHL, E. (2); Mechanoreceptors in the Lobster, COHEN, M. J.; Gastroliths, Crayfish, ORR, H. B.; growth in *Orconectes*, McWHINNIE, M. A.; Stridulatory organs in *Panulirus*, MOULTON, J. M. (1).

Reproductive organs.—*Parapenaeopsis*, SHAIKH-MAHMUD, F. S. & TEMBE, V. B.; *Chthamalus*, TENERELLI, V.; Incubatory cavity in Oxycephalidae, FAGE, L. (1).

Alimentary system.—Stomach of terrestrial Isopoda, RADU, V. V.; Alimentary canal, *Nebalia*, SIEWING, R. (1); Mid-gut gland cells in *Procambarus*, OGURA, K.; Hepatopancreas, VASCONCELOS FRAZAO, J.

Circulatory system.—Stomatopoda, MAYRAT, A. (3); Cardiac regulation, JULLEN, A., CARDOT, J., RIPPlinger, J. & JOLY, M.; Evolution in Malacostraca, MAYRAT, A.; *Meganyctiphanes*, MAUCHLINE, J. (1); Sinus gland, HODGE, M. H. & CHAPMAN, G. B.; Idothidae, OGURA, C. (1) & (2).

Histology.—*Pandalus*, CARLISLE, D. B. (1) & (2); *Parapenaeopsis*, SHAIKHMAHMUD, F. S. & TEMBE, V. B.; *Nebalia*, SIEWING, R. (1); *Gammarus*, ANDERS, A.; Terrestrial Isopoda, PATANÉ, L. (2); Rhizocephala, VEILLET, A. & GRAF, F.; *Chthamalus*, TENERELLI, V.

Cytology.—*Cyclops*, nucleus & anabolism, FAUTREZ, J.; Mitochondria, *Artemia*, FAUTREZ-FIRLEFYN, N.; Fine structure of meiotic spindle, RUTHMANN, A.; of spermatocyte, RUTHMANN, A. (1); Midgut glands, STRUNK, S. W.; Sinus gland, HODGE, M. H. & CHAPMAN, G. B.; Meiosis in Crayfish, MARUYAMA, K.; Mitosis, *Artemia*, FAUTREZ, J. & FAUTREZ-FIRLEFYN, N.; Copepoda polar bodies, KIKNADZE, I. I.; Chromosomes, BEERMANN, S.; Malacostraca, NIYAMA, H. (2); Isopods, NIYAMA, H. (1); *Cyathura*, BURBANCK, W. D. & M. P.

Teratology.—Bicoloured lobster, EDMAN, G.; *Balanus* distorted by toxins, STUBBINGS, H. G. (1); *Panulirus*, heteromorphic regeneration, DALAL, N. M.

PHYSIOLOGY

Metabolism.—Crustacea, FLOKIN, M. Cavernicolous crustacea, DEROUET, L.; Metabolism in diploid & tetraploid *Artemia*, BELLINI, L. & VINCENTIS, D. M. de; Cirripedia, BARNES, H. & M. (1) & (7); *Aegla*, RIQUELME, M. & VARGAS, F.

Circulatory system.—Lobster, heart-weight & size, MAYNARD, D. M.; *Panulirus*, heart stimuli, RANGONEKER, P. V., GATONDE, B. B. & MANDREKAR, S. S.; Blood composition, *Carcinus*, GILBERT, A. B. (3); *Cancer* ZUCKERKANDL, E.

Serology.—*Daphnia*, VATOVCE, S. & TIMET, D. & (1); Crayfishes, JOHNSON, R. M.

Osmoregulation.—Ionic equilibrium, PORA, E. A.; Copepod eggs, DAVIS, C. C. (1); Sphaeromidae, RIEGEL, J. A.; *Asellus*, LOCKWOOD, A. P. M.; *Cragdon*, FLÜGEL, H.; *Pachygrapsus*, GROSS, W. J.; *Uca*, GREEN, J. W., HARSCH, M., BARR, L. & PROSSER, C. L.;

Potamon, ALLANSON, B. K. & KRIKSGEMAN, B. J.; *Potamon*, SHAW, J.; *Libinia*, SANBORN, R. C.; Salt & water regulation in crabs, FLEMISTER, L. J.

Respiration.—CONOVER, R. J.; Sodium, LOCKWOOD, A. P. M. (1) & (2); Cytochrome and respiration, MATTISON, A. G. M.; Oscillatory mechanism, BARNES, H. & M. (8); O_2 and salinity, STOICOVICI, F. & ROSCA, D. I.; Cavernicolous crustacea, DEROUET, L.; *Chondracanthus*, KRISHNASWAMY, S. (2); *Simocephalus*, HOSHI, T.; Sea weed inhabiting Amphipods, WIESER, W. & KANWISHER, J.; Talitridae, HURLEY, D. E. (1); *Metapenaeus*, GOPALAKRISHNAN, V.; *Macrobrachium*, BASTOS, J. A. M. & PAIVA, M. P.; *Orconectes* during moult, LAMBERT, F. L.; *Cancer*, HANLON, D. P.; *Uca*, TEYAN, F. J., SUDAK, F. N. & CLAFF, C. L.; VERNBERG, F. J. (0-1); BRETT, W. J., WEBB, H. M. & BROWN, F. A.; *Ocyrops*, FLEMISTER, S. C.; Environmental effects on *Hemigrapsus*, DEHNEL, P. A.; Crabs, TEAL, J. M.

Excretion.—Talitridae, HURLEY, D. E. (1); *Pachygrapsus* & influence of salinity, GROSS, W. J. (1); *Ocyrops*, FLEMISTER, S. C.

Nutrition and Digestion.—Substitute food for cultures, LOREC, Z.; Hepato-pancreas, VASCONCELOS FRAZAO, J.; Hepatopancreas, ZUCKERKANDL, E. (4); LEBEDEVA, M. N.; Marine copepoda, GEINRIKH, A. K. (1); Cyclops, MONAKOV, A. V. & SOROKIN, Y. I. (2); MONAKOV, A. V. & SOROKIN, Y. I.; *Artemia* & *Tigriopus*, PROVASOLI, L., SHIRAIISHI, K. & LANGE, J. R.; *Idotea*, GAJEVSKAJA, N. S.; *Limnoria*, DESCHAMPS, P.; KOHLMEYER, J., BECKER, G. & KAMPF, W.-D.; *Gammarus*, BICK, H.; *Penaeus*, GOPALAKRISHNAN, V.; Carbohydrate metabolism, *Carcinus*, SCHEER, B. T.

Muscle physiology.—FATT, G. & GINSBORO, B. L.; KROLENKO, S. A.; Ba action, WERMAN, R. & GRUNDFEST, H.; Inhibition, WIERMA, C. A. G. (1); Crayfish—contraction stimuli, KLOOT, W. G. van der & ROBBINS, J.; Lobster & crayfish, MATTISON, A. G. M.; Lobster, WERMAN, R. & GRUNDFEST, H. (1); COWGILL, R. W. & (1); GRUNDFEST, H., REUBEN, J. P. & RICKLES, W. H.; *Carcinus*, DUCHATEAU, G., FLOKIN, M. & JEUNIAUX, C.; BURKHARDT, D. (2); DALTON, J. C. (1).

Nerve physiology.—EDWARDS, C. & OTTOSON, D.; WATANABE, Y.; Cardiac regulation, JULLEN, A., CARDOT, J., RIPPlinger, J. & JOLY, M.; Central nervous system crustacea, CLAUSEN, D. M. & PALZ, F. E.; Anostraca, eyes & neurosecretion, LOCHHEAD, J. H. & REISNER, R.; BURKHARDT, D. (1); Crayfish, HICHAIR, J. K.; *Eupagurus*, STEVE, H. & (1); BERGMANN, F., REUBEN, J. P. & GRUNDFEST, H.; HAGIWARA, S. & BULLOCK, T. H.; FELDHEER, C.; Lobster, WATANABE, A. (1); *Carcinus*, WIERMA, C. A. G. & BOETTIGER, E. G.; *Cambarellus*, FINGERMAN, M. & AOTO, T.; *Euphausiacea*, KAMPA, E. M., BODEN, B. P. & ABBOTT, B. C.; Heartbeat, *Daphnia*, MEIJERING, M. P. D.; FRITSCH, R. H.; Retinal pigment *Palaemonetes*, FINGERMAN, M., LOWE, M. E. & SUNDARARAJ, B. I.; *Panulirus*, membrane potential, OTANI, T. & BULLOCK, T. H.; Chemical excitation, REUBEN, J. P. BERGMANN, F. & GRUNDFEST, H.; Hyperpolarization of muscle, REUBEN, J. P., WERMER, R. & GRUNDFEST, H.; Effects of calcium on axons, ADELMAN, W. J. & ADAMS, J.; Crayfish, amino-acid stimulation, ROBBINS, J.; Motor fibre, FURSHPAN, E. J. & POTTER, D. D. (1); Ganglion, PRESTON, J. B. & KENNEDY, D.; Caudal ganglion, KENNEDY, D.; Heart ganglion, FLOREY, E.; Giant motor-synapses, FURSHPAN, E. J. & POTTER, D. D.

Sense Organs.—*Daphnia*, JANDER, R.; *Palaemonetes*, PRAUNIS, NICOL, J. A. C.; *Cambarus*, thermoreception, INOUE, K., TAKESIGE, T., SUZUKI, S. & MORIGUTI, S.; Retinal image in *Homarus* & *Orconectes*, NUNNEMACHER, R. F.; Statocyst, SCHÖNE, H.; Stretch receptor organ, BURKHARDT, D.; *Mysis*, photoreception, BEETON, A. M.; Decapoda—movement receptors, WIERMA, C. A. G.; Colour perception *Daphnia*, VIAUD, G.

Reproductive organs.—CHARNIAUX-COTTON, H. (1); Gonad maturation, *Thysanoessa*, ZELIKMAN, E. A.

Hormones.—Endocrine control. CARLISLE, D. B. & KNOWLES, F. G. W.; Crayfish, DURAND, J. B.; *Astacus*, KUHNEN, H. & BECK, H.; *Orconectes*, FINGERMAN, M., LOWE, M. E. & SUNDARARAJ, B. I.; FINGERMAN, M., LOWE, M. E. & SUNDARARAJ, B. I. (3); *Orconectes* & *Cambarus*, FINGERMAN, M., MOBERLY, W. C. & SUNDARARAJ, B. I.; FINGERMAN, M. (2); *Procambarus*—ovarian-inhibiting, IWAKURA, C.; *Pisa*, VERNET-CORNUBERT, G.; ALTMANN, G.; DEMEUSY, N.; ÉCHALIER, G.; *Macropipus*, BURGERS, A. C.; *Carcinides*, SCHEER, B. T. (1); *Sacculina* on *Pachygrapsus* study, VERNET-CORNUBERT, G. (1); *Rhizocephala*, VEILLET, A. & GRAF, F.; Oniscoidea, LEGRAND, J.-J. (3); Oniscoidea, implantation of reprod. tissue, LEGRAND, J.-J. (2); *Armadillidium*, implanting testes, KATAKURA, Y.; *Porcellio*, LEGRAND, J. J. & (1); *Metoponorthus*, SHIMOZUMI, M. (2); *Crangon*, FINGERMAN, M., SANDEEN, M. I., MOBERLY, W. C. & PHILPOTT, C. W.; *Lysmata*, CHARNIAUX-COTTON, H. (3); *Palaemon*, CARLISLE, D. B.; *Palaemonetes*, FINGERMAN, M., SANDEEN, M. I. & LOWE, M. E. (1); FINGERMAN, M., LOWE, M. E. & SUNDARARAJ, B. I. (2); FINGERMAN, M., PHILPOTT, C. W., SANDEEN, M. I., & MOBERLY, W. C.; FINGERMAN, M., MOBERLY, W. C. & PHILPOTT, C. W.; *Pandalus*, CARLISLE, D. B. (2); Hormonal control of respiration, TEYAN, F. J., SUDAK, F. N. & CLAFF, C. L.; *Orconectes* & ecdysis hormone, FINGERMAN, M., LOWE, M. E. & SUNDARARAJ, B. I. (3).

Neurosecretion.—BARNES, H. & GONOR, J. J.; MATSUMOTO, K. (0-1); FINGERMAN, M. (1).

Colour change.—LINZEN, B.; Neurosecretion and colour change, KNOWLES, F.; Copepods, PESTA, O. (2); *Artemia*, DUTRIEU, J. (1); *Cypris*, GREEN, J.; *Meganyctiphanes*, FISHER, L. R. & GOLDIE, E. H.; *Crangon*, SANDEEN, M. I. & FINGERMAN, M.; *Palaemonetes*, analysis of chromatophores, FINGERMAN, M., SANDEEN, M. I. & LOWE, M. E.; FINGERMAN, M., SANDEEN, M. I. & LOWE, M. E. (1); Adaptation in *Hippolyte*, CHASSARD, C.; Albinsim in *Aegla*, LOPEZ, B., M. T.; Bicoloured Gynandromorph of *Homarus*, CHACE, F. A. & MOORE, G. M.; *Cambarus*, chromatophorotropins, FINGERMAN, M. (1) & (1a); Crayfish, chromatophore comparison, FINGERMAN, M.; UCA, STEPHENS, G. C., GREEN, J. P., GUTTMAN, B. & SCHINSKE, R. A.; STEPHENS, G. C., GUTTMAN, B. & GREEN, J. P.; ablation of peduncles in *Carcinus*, LENEL, R.; Arthropod retina, pigmentation, KLEINHOLZ, L. H.

Bioluminescence.—BASSOT, J. M.; HARVEY, E. N., CHASE, A. M. & McELROY, W. D.; HANEDA, Y., JOHNSON, F. H. & SIE, E. H. C. NICOL, J. A. C.

Ecdysis.—JEUNIAUX, C.; *Carcinides*, SCHEER, B. T. (1); ÉCHALIER, G.; DEMEUSY, N.; SCHEER, B. T.; *Pisa*, VERNET-CORNUBERT, G.; *Gecarcinus*, SKINNER, D. M.; *Orconectes*, LAMBERT, F. L.; In *Palaemon*, PASTEUR, C.; *Leander*, TCHERNIGOVITZ, C.; *Balanus*, CRISP, D. J.; COSTLOW, J. D. & BOOKHOUT, C. G.; Barnacles, BOOKHOUT, J. D., Jr. & COSTLOW, C. G.; *Daphnia*, FRITSCH, R. H.

Biochemistry.—ALLANSON, B. R. & KRIJGSMAN, B. J.; COROMALDI, L. de C. & URBANI, E.; DUMONT, P.; HERTS, F. & VERCAUTEREN, R.; NIKON, R.; NAKA, K. & KUWABARA, M.; SCHEER, B. T. (1); Blood, GILBERT, A. B. (0-3); GREEN, J.; McWHINNIE, M. A. & SALLER, S. F. N.; JAKOBI, H. & SILVA, J. de L.; VATOVEG, S. & TRIMET, D. (1); Blood, *Cancer*, ZUCKERKANDL, E. (1-3); Carbohydrate metabolism, SCHEER, B. T.; Mitosis & polysaccharides, FAUTREZ, J. & FAUTREZ-FIRLEFYN, N.; Fat content, BELLINI, L.; Protein metabolism, BELLINI, L. & VINCENTIS, D. M. de; Enzymes, COWGILL, R. W.; DOYLE, W. L., RAPPAPORT, R. & DOYLE, M. E.; RAY, D. L.; Cuticle, KRAUSE, H. R.; MEENAKSHI, V. R. & SCHEER, B. T.; VERCAUTEREN, R. E. & AERTS, F.; Nucleic acids, FAUTREZ, J.; KKNADZE, I. I. (1); MATA CZYNSKA-SUCHUTZ, Z.; Fatty acids, chromatography, FARKAS, T. & HERODEK, S.; KUHNEN, H. & ZOCH, E.; PONYI, J. & (1); RANKE, B.; SMYTH, T.; Electrophoresis, FRENTZ, R. & VEILLET, A.; SANDEEN, M. I. & FINGERMAN, M.; Biochemistry of eggs, DUTRIEU, J.; SUYAMA, M.; Cephalotoxin paralyzing crabs, GHIRETTI, F.

Vitamins.—E, JACOBI, H. & LOUREIRO, T. S.; A, FISHER, L. R. & KON, S. K.; A, FISHER, L. R. & GOLDIE, E. H. (1).

REPRODUCTION AND SEX

Reproduction.—*Artemia*, REYNIER, M.; *Daphnia*, WOYNÁROVICH, E.; SUGINOME, M.; Copepoda, PRASAD, R. R. & KARTHA, K. N. K.; BATTAGLIA, B. (2); MONAKOV, A. V. (1); SZLAUER, L.; SZLAUER, L. (1); *Eudiaptomus*, CZECZUGA, B.; MASON, J.; Barnacles, COSTLOW, J. D.; *Balanus*, CRISP, D. J. (0, 2); *Porcellio*, LEGRAND, J.-J.; PATANÉ, L.; *Metoponorthus*, SHIMOZUMI, M. & (3); *Monodella*, STELLA, E.; *Mysis*, HOLMQUIST, C. (1); Euphausiacea, PONOMAREVA, L. A.; *Metapenaeus*, MENON, M. K.; Paguridae & Lithodidae, PIKE, R. B. & WILLIAMSON, D. I.; *Squilla*, KUBO, I., HORI, S., KUMEMURA, M., NAGANAWA, M. & SOEDJONO, J.; *Pachygrapsus*, *Hemigrapsus*, *Pugettia*, *Emerita*, *Petrolisthes*, BOOLOOTIAN, R. A., GIESE, A. C. & FARMANFARMAIAN, A. & TUCKER, J.; Fertilization in *Chthamalus*, BARNES, H. & M.; TENERELLI, V. (1-2).

Parthenogenesis.—*Leptodora* & *Bythotrephes*, MORDUKHAI-BOLTOSKAYA, E. D. (1).

Female Sexual Cycle.—LEGRAND, J.-J. (2).

Secondary Sexual Characters.—CODREANU, R. & M.; *Artemia*, REYNIER, M.; *Porcellio*, SHIMOZUMI, M.; *Metoponorthus*, SHIMOZUMI, M. (2), (4).

Sex dimorphism.—Dwarf males, Lake Baikal, BEKMAN, M. In.; *Oithona*, CRISAFI, P. (3); *Linaria*, BOULIGAND, Y. & DELAMARE-DEBOUTTEVILLE, Cl.; *Calanus*, WOODHEAD, P. M. J. & RILEY, J. D.; *Porcellio*, SHIMOZUMI, M.

Sex ratio.—*Squilla*, KUBO, I., HORI, KUMEMURA, K., NAGANAWA, M. & SOEDJONO, J.; *Calanus*, WOODHEAD, P. M. J. & RILEY, J. D.; *Tisbe*, BATTAGLIA, B.

Sex Determination.—Malacostraca, NIYAMA, A. (2); *Artemia*, radioactivity culture, GROSCH, D. S. & PLUMB, M. E.; *Cerimunda*, NIYAMA, H.; *Asellus*, BALESSENT-MARQUET, M.-L. & VEILLET, A.; *Idotea*, TINTURIER-HAMELIN, E.; *Porcellio*, LEGRAND, J.-J. (1); *Orchestia*, CHARNIAUX-COTTON, H.; *Pandalus*, CARLISLE, D. B. (2); *Lysmata*, CHARNIAUX-COTTON, H. (3).

Hermaphrodites and Intersexes.—*Homarus*—gyn-andromorph, CHACE, F. A. & MOORE, G. M.; *Porcellio*, SHIMOIZUMI, M.; LEGRAND, J.-J. (1); *Metoponarthus*, SHIMOIZUMI, M. (1); *Rhyssoloides*, JOHNSON, G.; *Orchestia*, CHARNIAUX-COTTON, H. (1).

DEVELOPMENT

Development.—*Artemia*, REYNIER, M.; *Artemia*, BAI, I. C.; *Oithona*, RAMAMOHANA RAO, V.; Ontogeny, *Triops*, DAHL, E. (2); *Chirocephalus* eggs, HALL, R. E.; *Mesocyclops*, MONAKOV, A. V.; *Chirocephalus*, NOURISSON, M.; *Balanus*, PILLAI, N. K. (2); *Monodella*, STELLA, E.; *Penaeus*, MAYRAT, A. P.; *Euphausia*, BAKER, A. de C.; *Meganyctiphanes*, MAUCLINE, J.; *Calappa* & *Matula*, RAJA BAI, K. G. (1); *Orchestia*, reprod. system & androgenic glands, CHARNIAUX-COTTON, H. (2); Ontogeny of fossil ostracods, ADAMCZAK, F.

Egg.—Hatching, BARNES, H. & M. (3); CRISP, D. J. & SPENCER, C. P.; CHAIGNEAU, J.; DEXTER, R. W.; Biochemical study, SUYAMA, M.; Osmosis in Copepod eggs, DAVIS, C. C. (1); Sinking of *Calanus* eggs, MARSHALL, S. M. & ORR, A. P.; Copepoda—egg string shape, HEEGAARD, P.; Ova attachment, *Eupagurus*, MATTHEWS, D. C.; Formation in *Daphnia*, SUGINOME, M.; Viability & production *Streptocephalus*, MOORE, W. G. (1); in *Chirocephalus*, HALL, R. E. (0-2).

Spermatogenesis and Oogenesis.—Spermatocyte, fine structure, RUTHMANN, A. (1); Potamon, BAFFONI, G. M.

Embryology.—*Artemia*, FAUTREZ-FIRLEFYN, N.; *Balanus*, CRISP, D. J. (1); *Daphnia*, ESSLOVA, M.; *Marinogammarus*, DOYLE, W. L., RAPPAPORT, R. & DOYLE, M. E.; *Heptacarpus*, OSHI, S.

Larval stages.—*Artemia*, *Balanus*, *Penaeidae* & *Euphausiacea*, GAULD, D. T.; *Artemia*, REYNIER, M.; *Triops*, DAHL, E. (2); *Limnocalanus*, LINDQUIST, A.; *Cancerillidae*, CHANGEUX, J.-P.; *Lernaeiculus*, CARVALHO, J. de P.; *Nitchoff*, MASON, J.; *Tisbe*, BATTAGLIA, B. (4); *BATTAGLIA*, B. & TALAMINI, P.; *Chelonibia*, PILLAI, N. K. (2); *Balanus*, BARNES, H. & M. (6) & (4); *Barnacles*, RZHEPISHEVSKII, I. K.; *Phyllamphion* "Phyllosoma" stage, BELLOC, G.; *Euphausiacea*, PONOMAREVA, L. A.; *Euphausia*, BAKER, A. de C.; *Meganyctiphanes*, MAUCLINE, J.; *Decapoda*, LEBOUR, M. V.; *PIKE*, R. B. & WILLIAMSON, D. I. (1); *Amphipoda*, AL-KHOLY, A. A. (1); *Panulirus*, HARADA, E.; *PRASAD*, R. R. & TAMPI, P. R. S.; *Calocaris*, ELOFSSON, R.; *Paralithodes*, KURATA, H.; *Brachyura*, AL-KHOLY, A. A.; *Philyra*, CHHAPGAR, B. F. (1); *Emerita*, REES, G. H.; *Dotilla*, RAJABAL, K. G.; *Paraxanthias*, KNUDSEN, J. W. (2); *Lophonopoeus*, KNUDSEN, J. W. (1); *Callinectes*, COSTLOW, J. D. & BOOKHOUT, C. G.; *Squilla* & *Neptunus*, RAJA BAI NAIDU, K. G.; *Crabs*, CHHAPGAR, B. F. (3); *Stomatopoda*, ALIKUNHI, K. H.

Growth.—*Daphnia*, WOYNÁROVICH, E.; *Mesocyclops*, MONAKOV, A. V.; *Barnacles*, BOOKHOUT, J. D., Jr. & COSTLOW, C. G.; *BARNES*, H. & M. (2) & (5); *COSTLOW*, J. D. & BOOKHOUT, C. G.; *Protracheoniscus*, GERE, G.; *Megaligia* growth of appendages, etc., INAGAKI, S.; *Oxycephalidae*, FAGE, L.; *Euphausia*, BAKER, A. de C.; Ova—*Meganyctiphanes*, MAUCLINE, J. (1); *Chelipeds of Palaemon*, MISRA, R. K.; *Penaeus*, MAYRAT, A. (1); *Metapenaeus*, MENON, M. K.; *Squilla*, KUBO, I., HORI, KUMEMURA, M., NAGANAWA, M. & SOEDJONO, J.

Regeneration and Autotomy.—*Porcellio*, PATANÉ, L. (1); *Cambarus*, BARTCH, A.; *Limbs* in crayfish, DURAND, J. B.; *Xanthidae*, KNUDSEN, J. W.

EVOLUTION AND GENETICS

Evolution.—SHAROV, A. G.; *Cephalocarida*, SANDERS, H. L.; *Arterial system* in Malacostraca, MAYRAT, A.; *Woodlice*, VANDEL, A. (5) & (1); *Estuarine Isopods*, PILLAI, N. K. (4); *Isopoda*, PILLAI, N. K. (3); *Talitridae*, HURLEY, D. E. (1); *Brachyura*, DRACH, P.; *Relict Fauna*, PENNINGTON, W.; *BACESCU*, M.

Genetics.—Relation to marine biology, BUZZATI-TRAVERSO, A.-A.; *Tisbe*, BATTAGLIA, B.; *Sphaeroma*, BOQUET, C. & HOESTLANDT, H.; *Lejuez*, R. & (1); *HOESTLANDT*, H.; *Armadillidium*, HOWARD, H. W.; *Gammarus*, ANDERS, A.; *Mysis*, HOLMQUIST, C. (1).

Variation.—*Talitridae*, HURLEY, D. E. (1); *Mysis*, HOLMQUIST, C. (1); *Macrobrachium*, JOHNSON, D. S. (1).

ECOLOGY AND HABITS

General Ecology.—Bottom sampling of fauna, ALBRECHT, M.-L.; Adaptations to water flow, JOHNSON, D. S.; Pond fauna, after thawing, MORIYA, K.

Ecology of special forms.—*Chirocephalus*, NOURISSON, M.; *Eubranchipus*, MOORE, W. G.; *Cladocera*, MAEMETS, A.; *Eurycerus*, KAISER, E. W.; Of marine *Cladocera* (1), PAVLOVA, E. V.; Parasitic Copepoda, BAUER, O. N.; *Acanthochondria*, KABATA, Z.; *Argulus*, KOLLATSCH, D.; *Lernaea* in fishponds, YASHONO, A.; *Harpacticoida*, JAKOBI, H. & (1); *BATTAGLIA*, B. (2); *Barnacles*, KATO, M., HAYASAKA, K. & MATSUDA, T.; *GUILLER*, E. R.; *CONNELL*, J. H.; *HOSHIAI*, T.; *Wood boring crustacea*, NAIR, N. B. & LEIVESTAD, H.; *Terrestrial Amphipods*, HURLEY, D. E. (1); *Amphipoda*, BARNARD, J. L. & REIB, D. J.; *Gammarus*, KINNE, O.; *Corophium*, FALETANS, N.; *ROMANOVA*, N. N.; *Niphargus*, GINET, R.; *Isopoda*, MENZIES, R. J. & BARNARD, J. L.; *Syncarida*, STEWING, R. (2); *Caridina*, KAMITA, T.; *Lobsters*, VINOGRADOV, L. G. & NEYMAN, A. A.; *Fiddler crabs*, TEAL, J. M.; *Uca* ALTEVOGT, R. (1) & (2) & (3); *Temperate & tropical*, VERNBERG, F. J. & TASHIAN, R. E.; *Distribution of intertidal crabs*, SNELLING, B.; *Woodlice*, VANDEL, A. (1).

Marine Habitats.—Brackish water, JONES, N. S. & BURBANCK, W. D.; *SALMON*, J.; *BULL*, F.; *HONEYMAN*, H. & *KNOTT*, S.; *Marine rock pools*, VAGLETT, E.; *Shore ecology*, BUCHANAN, J. B.; *Plankton*, BARY, B. M.; *BOGOROV*, B. G.; *BRODSKY*, K. A. (3); *BRODSKY*, K. A., *MARKOV*, K. K. & *SHILNIKOV*, V. E.; *CASSIE*, R. M.; *DELLA CROCE*, N. & *SERTORI*, T.; *DEMEL*, K. & *MULICKI*, Z.; *EINARSSON*, H. & *GÜRTÜRK*, N.; *GANAPATI*, P. N. & *MURTHY*, V. S. R.; *JESS*, H.; *LEWIS*, A. G.; *MANKOWSKI*, W. & (1); *NEGREA*, S., *NEGREA*, A. & *ELIAN*, L.; *RAYMONT*, J. E. G. & *CARRIE*, B. G. A.; *SENO*, J.; *VINOGRADOV*, M. E.; *WIBORG*, F.; *WALDMANN*, J.; *WIKTOR*, K.; *YAMAZI*, I.; *Deep sea*, WOLFF, T. (1) & (2); *DAHL*, E.

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Subterranean.—BORUTZKY, E. (2); COIFFAIT, H.; FRANCISCOLO, M. E.; KARAMAN, S. L.; LABOREL, J. & VACELET, J.; HUSSON, R.; LOKSA, I.; PRIESEL-DICHTL, G.; RUFFO, S. (7) & (9); LOKSA, I. (1); STRINATI, P. & AELLEN, V.; Copepoda, CHAPPUIS, P. A. & ROUGH, R. & (1); CHAPPUIS, P. A. (4); KIEFER, F. (2); LINDBERG, R.; PESTA, O. (3); PETKOVSKI, T. K. (5); OSTACODA, WALTON, M. & HOBBS, H. H.; Oniscoidea, VANDEL, A. (4); *Asellus*, MATSUMOTO, K. (2); *Caecospheeroma*, *Niphargus*, DRESCODEROUET, L.; *Niphargus*, GINET, R.; Amphipoda, KARAMAN, S. L. (1); RUFFO, S. (8); SHOEMAKER, C. R.; *Ingolfiella*, NOODT, W. (2); Peracarida, HUSSON, R. (1); Natantia, YALDWIN, J. C.

Interstitial.—CHAPPUIS, P. A. & SERBAN, M.; PLES, C. (1); REMANE, A.; RENAUD-DEBYSSER, J.

Terrestrial habitats.—Soil fauna & forest litter, DRIFT, J. van der.

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Population Studies.—BEKLEMISHEV, K. V.; Fish population & *Daphnia*, HRBÁČEK, J. (3); *Daphnia* populations, SLOBODKIN, L. B.; STOUT, V. M.; Cladocera & bacterial numbers, MANUILOVA, E. F.; *Oithona*, CRISAFI, P. (1); *Tigriopus*, IGARASHI, S.; Copepoda, ZELICKMAN, A. L. & HEINRICH, A. K.; Harpacticoids, BATTAGLIA, B. (1); Barnacles, CONNELL, J. H.; *Cambarus*, BOVBERG; *Uca*, survival rate against weed killers, CLAFF, C. L., SUDAK, F. N. & MOLONEY, V.

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(1); *Penaeus*, MAYRAT, A. (1); Applied to taxonomy, VANDEL, A. & MATSAKIS, J. (1).

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Feeding mechanisms.—CHINDONOVA, Y. G.; Marine copepoda, PETIPA, T. S.; BEKLEMISHEV, K. V.; MONAKOV, A. V. (3); Cirripedia, BARNES, H. (1); *Pollicipes*, BARNES, H. & REESE, E. S.; *Lepas* & *Mitella*, HOWARD, G. K. & SCOTT, H. C.; *Penilia*, PAVLOVA, E. V.; Cladocera, MORDUKHAI-BOLTOVSKAYA, E. D.

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Entocythere on *Pacifastacus*, WESTERVELT, C. A. & KOZLOFF, E. N.; on *Procambarus*, WALTON, M. & HOBBS, H. H.; Ostracods, HART, C. W., Jr.; Ostracoda on crayfish, CRAWFORD, E. A.; Gall-forming barnacle *Acasta*, UTINOMI, H. (1); *Mytilicola* in intestine of *Macra*, HOSHINA, T. & KUWABARA, R.; *Balanus* on *Corbuloidea*, BĂCESCU, M., DUMITRESCU, H., MANEA, V., POR, F. & MAYER, R.; Amphipoda on Echinoderms, RUFFO, S. (6); *Anapagurus* & *Paracalliactis*, DECHANCE, M. & DUFAURE, J. P.; *Calliactis* on *Eupagurus*, ROSS, D. M.

GEOGRAPHICAL DISTRIBUTION

Zoogeography, SEGERSTRALE, S.; Distribution freshwater invertebrates U.S.A., PENNAK, R. W.; Deep Sea Malacostraca, BIRSTEIN, J. A.; Talitridae, HURLEY, D. E.

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NORTH TEMPERATE

North Atlantic.—EUROPEAN SIDE, BARNES, H.; BRODSKY, K. R.; HOESTLANDT, H. & (1) & (3).
Norwegian Coast.—ELOFSON, R.; NAIR, N. B.; NAIR, N. B. & LEIVESTAD, H.; WIBORG, F.

French and Iberian Coasts.—BOCQUET, C.; STOCK, J. H. & BÉNARD, F.; CRISP, D. J.; CRISP, D. J. & FISCHER-PIETTE, E.; KISCH, B. S.; LOPEZ-BONITO, M.; SUAN, P. & VIVES, Y. F.; ALMAÇA, C.; MUCHADO-CRUZ, J. A.

N.W. African Coast.—FURNESTIN, M.-L. & (1); MASSUTI, M.; RODRÍGUEZ-RODA, J.;

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American Atlantic Coast.—BARNES, H. (3); FISCHLER, R. J.; HENRY, N. P.; JONES, N. S. & BURBANCK, W. D.; LACROIX, G.; SCHROEDER, W. C.; TEAL, J. M.; WILLIAMS, A. B.

British Coastal Waters.—ALLEN, J. A.; BULL, F.; HONEYMAN, H. & KNOTT, S.; COLLINS, J.; CRISP, D. J. & SOUTHWARD, A. J.; DARTNALL, A. J. & (1); FORSTER, G. R.; GOTTO, R. V.; KABATA, Z. (0-1); KRISHNASWAMY, S.; MCINTYRE, A. D.; MARKOWSKI, S.; MASON, J. (0-1); NAGABHUSHANAN, A. K.; PIKE, R. B. & WILLIAMSON, D. I.; NAYLOR, E.;

RAE, B. B.; RAYMONT, J. E. G. & CARRIE, B. G. A.; SPOONER, G. M. & (1); T[THOMAS], H. J. (1); THOMAS, H. J. (3); WOOD, H.

Irish Coast.—AITKEN, J. J. & HILLIS, J. P.; CEIDIGH, P. O.; GIBSON, F. A.; KITCHING, J. A., SLOANE, J. F. & EBLING, F. J.; ROE, K. M.

English Channel.—RULLIER, F.; SOLLAUD, E.; BOQUET, C. & STOCK, J. H. & (1), (2); OORD, A. M. van den & HOLTHUIS, L. B.

North Sea.—DZWILLO, M.; NOODT, W.

Baltic Sea.—BAUSE, K.; DEMEL, K. & MULICKI, Z.; LINDQUIST, A.; MANKOWSKI, W. & (1); MESSNER, B. & WOHLRAT, F.; SEGERSTRALE, S. G. (1); SCHWARZ, S.; STOCK, J. H. (3); VALVIRTA, E. J.; WALDMANN, J. & (1).

Mediterranean Sea.—BATTAGLIA, B. (1) & (2); BOULIGAND, Y. & DELAMARE-DEBOUTTEVILLE, Cl.; CHANGEUX, J. P.; CHANGEUX, J. P. & DELAMARE-DEBOUTTEVILLE, Cl.; CRISAFI, P. (0-2, 4); DELLA CROCE, M.; DELLA CROCE, N. & SERTORIO, T.; DEMIR, M. (0-1); EBELT, J.; GENOVESE, S.; HOLTHUIS, L. B. & GOTTLIEB, E.; LABOREL, J. & VACELET, J.; LAUBIER, L.; NUNES-RUIVO, L.; OLIVER, M.; PARENZAN, P.; PESTA, O. (3); RUFFO, S. (1) & (2) & (6); SACCHI, C. F.; SERBETIS, C.; STOCK, J. H. (0-1); TENERELLI, V. (2); UTMINO, H. (2-3); VACELET, E.; ZARIQUEY, R. A. & (2).

Black Sea.—BACESCO, M. (1); BREZEANU, Gh. & ELIAN, L.; CĂRĂUȘU, A.; CĂRĂUȘU, A. & S.; CODREANU, R. M.; DOLGOPOLSKAYA, M. A.; EINARSSON, H. & GURTURK, N.; MARCUS, A.; MARGINEANU, C. & PETRAN, A.; NEGREA, S.; PLEȘA, C. (1); PORUMB, F. I.; POGORELTSEVA, T. P.; SERBAN, M.; VINOGRAOV, L. G. & NEYMAN, A. A.

Caspian Sea.—NEBOLISNA, T. K.; ROMANOVA, N. N.; ZEVINA, G. B. (1).

NORTH PACIFIC

N. Pacific U.S.S.R. Coast.—BIRSTEIN, J. A.; BOGOROV, B. G.; BRODSKY, K. A.; BRODSKY, K. A. (3); BULCHEVA, A. (1); GEINRIKH, A. K.; GURYANOVA, E. (2); KORYAKOVA, Z. I.; KOS, M. S.; PAVLOVA, E. V. (1); USHAKOV, P. V. & others.

Japanese Coasts.—HARADA, E.; HARADA, I.; HOSHIAI, T.; HOSHINA, T. & KUWABARA, R.; IGARASHI, S.; ITO, T.; ONDO, Y.; PONOMAREVA, L. A.; NAGATA, K.; SAKAGUCHI, S.; SHINO, S. M. (0-1, 3-6); TANAKA, O.; UTMINO, H. (1); YAMAGUTI, S. & YAMASU, T.; YAMAZI, I.

China Coast.—SHEN, C.-J. & LI, H.-L.

American Pacific Coast.—BARNARD, J. L. (1) & (4); BARNARD, J. L. & REISH, D. J.; BARNES, H.; BENSON, R. H.; BOOLOOTIAN, R. A.; GIESE, A. C.; FARMANFARMAIAN, A. & TUCKER, J.; BUTLER, T. H.; CAMERON, F. E.; CARL, G. C. & GUGUET, C. J.; COFFIN, A. G.; FILICE, F. P.; HART, J. F. L.; HENRY, D. P.; KNUDSEN, J. W. (1) & (2); LIGHT, S. F.; SMITH, R. I.; PITEKKA, F. A.; ABBOTT, D. P. & WEESNER, F. M.; MARGOLIS, L.; REISCHMAN, P. G.; SHINO, S. M. (2); SCHEFFER, V. B.; WIESER, W.

TROPICAL

Tropical Atlantic.—HENRY, D. P. (1); HOESTLANDT, H. (1); JESS, H.

West African Coast.—BOSCHMA, H.; BUCHANAN, J. B.; CANDEIAS, A.; CAPART, A.; DUBOIS, L.;

CHAPPUS, P. A. (2); FOREST, J. (1); GUINOT-DUMORTIER, D.; HAIG, J.; LEBOUR, M. V.; MARQUES, E.; MONOD, Th. & (1); SANTOS PINTO, J. dos; VAESIERE, R.

American Atlantic Coast.—BEKLEMISHEV, K. V.; BELLOC, G.; BULLIS, H. R. & THOMPSON, J. R.; CARVALHO, J. de P.; ELDRED, B.; HENRY, D. P. (1); HOLTHUIS, L. B. (4); KORNIKER, L. S.; LEMOS DE CASTRO, A.; LEWIS, A. G. & (1); MANNING, R. B.; MOORE, H. B. & FRUE, A. C.; PARKER, R. H.; PROVENZANO, A. J.; REINHARD, E. G.; RODRIGUEZ, G.; SILVA, J. de L.; SUAREZ-CAABRO, J. A.

Indo-Pacific.—BANNER, A. H.; BOWMAN, T. E.; GARTH, J. S.; BRODSKY, K. A.; ESTAMPADOR, E. P.; GRICE, G. D.; HARTMANN, G. & (3); HENRY, D. P.; JOHNSON, D. S. (1) & (2); KIRTISINGHE, P.; SCHUSTER, O.; SERENE, R.; SIEWING, R.; STEPHENSON, W. & CAMPBELL, B.; TIRMIZI, N. M.; TWEDDIE, M.; WICKSTEAD, J.

Hawaiian Islands.—EDMONDSON, C. H.

Indian Ocean.—ALIKUNHI, K. H.; BALASUBRAHMANYAN, R.; BECKER, G. & KAMPF, W. D.; CHHAPGAR, B. F. & (1), (2) & (3); DANIEL, A.; FOURMANOIR, P.; GANAPATI, P. N.; LAKSHMANA RAO, M. V. & NAGABHUSHANAM, R.; GANAPATI, P. N. & MURTHY, V. S. R.; GANAPATI, P. N. & SHYAMASUNDARI, K.; GNANAMUTHU, C. P.; HUMES, A. G. & CRESSEY, R. F.; JOSHI, U. N. & BAL, D. V.; KRISHNASWAMY, S. & (1); JOHN, C. C. & KURIEN, C. V.; MENON, M. K.; NAYAR, K. N.; PAULIAN, R.; PILLAY, PILLAY, N. K.; PILLAI, N. K. & (1); QAZI, M. H.; RANGNEKAR, M. P.; RAJABAI, K. G. & (1); RAJA BAI NAIDU, K. G.; SHAIKHMAHMUD, F. S. & TEMBE, V. B.; TRIPATHI, Y. R. & (1).

Red Sea.—AL-KHOLY, A. A. & (1); BURKENROAD, M. D.; DOLLFUS, R. Ph.; HOLTHUIS, L. B. (2) & (3); NOUVEL, H.; RUFFO, S.

SOUTH TEMPERATE

South Atlantic Ocean.—South American coasts, BREHM, V. (2); HOLTHUIS, L. B. (6); COSTA, H. R. da; LEMOS DE CASTRO, A. (2).

S. African Waters.—BARNARD, K. H.

South Pacific Ocean.—Eastern S. Pacific, BAHAMONDE, N. N.; BOSCHMA, H. (3); BRODSKY, K. A.; COHIC, F.; FOREST, J.; GUILER, E. R.; NOODT, W. (2); YÁNEZ A., P.

Australian Waters.—RACEK, A. A.; HICKMAN, J. L.; POPE, E. C.; SNELLING, B.; SHIELD, J. W.; WOOD, E. J. F. & ALLEN, F. E.

New Zealand Waters.—BARY, B. M. & (1); GREEN, J. (1); HURLEY, D. E. (2); SKERMAN, T. M.; CASSIE, R. M.

ANTARCTIC

Antarctic Ocean.—GAMO, S. & (1); SENO, J.

PALAEONTOLOGY

PALAEOZOIC

Palaeozoic unspecified, NETZKYA, A. I.

Ordovician.—COLQUHOUN, D. J.; CRISPIN, I.; HOU, Y. T.; IVANOVA, V. A. & (1) & (2); SARV, I.

Devonian.—HAMADA, T.; ADAMCZAK, F.; JONES, P. J.; JUX, U.; KESLING, R. V.; KAVARY, E.; TAKAGI, R. S.; TILLMAN, J. R. & WULF, G. R.; PANSERI, C. & BARSOTTI, G.; WARREN, P. S. & STELCK, C. R.

Carboniferous.—ECHOLS, D. J. & CREATH, W. B.; GHORAK, S. V. & (1); GHUREVICH, K. Ya.; JONES, P. J.; NOVOZHILOV, N. I. (2); REMY, W. & REMY, R.; SARROT-REYNAUD, J. & HAUDOUR, J.; ROME, R. & GOREAUX, J.; THOMAS, G. A.; THOMPSON, M. L., SHAVER, R. H. & RIGGS, E. A.

Permian.—ECHOLS, D. J. & CREATH, W. B.; KROMMELBEIN, K.; NOVOZHILOV, N.; TASCH, P.

MESOZOIC

Triassic.—NAGY, E.; NOVOZHILOV, N. I. (1); VIRGILI, C.

Jurassic.—BACHMAYER, F. (0-1); BOLLI, H. M. & NABHOLZ, W. K.; DREXLER, E.; GARROT, H.; LACCASSAGNE, R. & NOUET, G.; GLINTZBOECKEL, C. & MAGNÉ, J.; KLINGLER, W. & NEUWEILER, F.; LEV, O. M.; LORANGER, D. M.; MALZ, H. (1-2); OERTLI, H. J.; TRIEBEL, E. & KLINGLER, W.; ZBYSEWSKI, G.

Cretaceous.—BARTENSTEIN, H. & BRANDT, E.; CHANG, W. T. (0-1); GLINTZBOECKEL, C. & MAGNÉ, J.; MARTIN, G. P. R.; OERTLI, H. J. (1); VOIGT, E.; WOLBURG, J.

TERTIARY

Tertiary unspecified, HOUSA, V.; PAPP, A.; PARKER, R. H.; TRIEBEL, E. (1).

Paleocene.—MARLIÈRE, R.

Eocene.—BOLD, W. A. van den (1); REYMENT, R. A.; REYMENT, R. & E.; VIA, L. B.

Miocene.—BUBIKYAN, S. A.; COMASCHI, C. I.; ÖTYROKY, P.; ILNICKAJA, N. M.; IMAIZUMI, R.; IMAIZUMI, R. (1); KOLOSARY, G.; MOYES, M. & VIGNEAUX, M.; OLIVEROS, J. M.; ESCANDELL, B. & RUGGIERI, G.; SILVA, G. H. de; TEWARI, B. S., TANDON, K. K. & BHARGAVA, O. W.

Pliocene.—FLEMING, C. A.; HANAI, T.; NISTOR-HANGANU, E.; RUGGIERI, G.; ZBYSEWSKI, G.

Pleistocene.—IMAIZUMI, R.; KANAKOFF, G. P. & EMERSON, W. K.; LÜTTIG, G.; NEALE, J. W.; SHOTTON, F. W. & STRACHAN, I.

QUATERNARY AND RECENT

FREY, D. G. (2); GORETSKY, G. I.; KANEKO, S.; ZBYSEWSKI, G.

III.—SYSTEMATIC

Crustacea—illustrated fauna list Far Eastern Seas U.S.S.R., USHAKOV, P. V. & others.

Crustacea, Queensland, waters many figs., common names, MARSHALL, T. C., GRANT, E. M. & HAYSON, N. M.

†Malacostraca, Miocene, COMASCHI, C. I.; Holocene, KANEKO, S.

Malacostraca, first leg segments, figs., discussed, etc., CARPENTIER, F. & BARLET, J.; evolution of arctic system, MAYRAT, A.; ciliates (Chonotrichida) epizootic on crustaceans, MOHR, J. L.

Malacostraca, Kentucky, COLE, G. A.; San Francisco Bay, FILICE, F. P.; deep sea, N.W. Pacific, BIRSTEIN, J. A.; Australia, zoogeography, economics, etc., RIEK, E. F.; U.S.S.R. waters, illustrated fauna list, USHAKOVA, P. V. & others.

STOMATOPODA

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Lysiosquilla maculata, *L. vicinia* fig., DOLLFUS, R. Ph. ; *Lysiosquilla* sp., larvae, figs., ALIKUNHI, R. H.

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DECAPODA

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Brachyura

†Brachyura, Pleistocene, Newport Bay, KANAKOFF, G. P. & EMERSON, W. K.

Brachyura, evolution, DRACH, P. ; neurosecretion study, figs., MATSUMOTO, K. (1) ; respiration in Georgia salt marshes, TEAL, J. M. ; breeding habits, Bombay coast, larval stages, keys, etc., CHHAPGAR, B. F. (3) ; distribution of intertidal crabs in Brisbane River, SNELLING, B. ; Caspian Sea, ZEVINA, G. B. (1) ; West Africa, biogeography, MONOD, Th. ; Red Sea, HOLTHUIS, L. B. (3).

Brachygnatha

BRACHYRHYNCHA

Brachyryncha, predators of mussels, KITCHING, J. A., SLOANE, J. F. & EBLING, F. J. ; Fiddler crabs, habits, photographs, distribution, ALTEVOGT, R.

Aratus pisonii fig., HOLTHUIS, L. B. (4).

†*Arges parallelus* figs., KANEKO, S.

†*Asthenognathus inequipes* figs., KANEKO, S.

Callinectes bocourti fig., HOLTHUIS, L. B. (4) ; *C. sapidus* fig., HOLTHUIS, L. B. & GOTTLIEB, E. ; *C. sapidus*, larval develop., figs., COSTLOW, J. D. & BOOKHOUT, C. G. ; migration, figs., CARGO, D. G. ; Aegean Sea, photo., SERBETIS, C. ; *C. ? sapidus*, dwarf forms ? Carolina, FISCHLER, K. J.

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Cancer pagurus coloured fig., ANON. ; *C. pygmaeus* fig., KOBAYAKOVA, Z. I. (1).

Carcinides maenas, distribut. French Atlantic Coast, CRISP, D. J. & FISCHER-PIETTE, E. ; behaviour of sacculinized specimens, RASMUSEN, E. ; chromatography study, RANKE, B. ; hormonal control, metabolism, SCHEER, B. T. (1) ; carbohydrate metabolism in ecdysis, SCHEER, B. T. ; blood conductivity & freezing point, GILBERT, A. B. ; composition of blood, GILBERT, A. B. (1) ; organ "Y", growth & moult, figs., ÉCHALIER, G. ; nerve physiology, figs., WIERSMA, C. A. G. & BOETTIGER, E. G. ; ocular peduncles & moult, etc., DÉMEUSY, N.

Cardisoma armatum photo., DUBOIS, L. ; *C. guanhumi*, fig., HOLTHUIS, L. B. (4).

†*Charybdis* cfr. *japonica* figs., IMAIZUMI, R. ; *C. japonicus* figs., KANEKO, S. ; *C. (Goniosoma) callianassa* larval stages, figs., CHHAPGAR, B. F. (3) ; *C. (Goniosoma) orientalis* figs., larval stages, CHHAPGAR, B. F. (3).

Cyclograpsus cinereus, *C. granulatus*, *C. henshawi*, figs., EDMONDSON, C. H.

Dorippe granulata fig., KOBAYAKOVA, Z. I. (1).

Dotilla blanfordi, larval stages, figs., RAJBABAI, K. G. ; *D. mictyroides*, habits, figs., TWEEDIE, M.

Erimacrus isenbeckii fig., KOBAYAKOVA, Z. I. (1).

Eriocheir japonica fig., KOBAYAKOVA, Z. I. (1) ; *E. sinensis* distribution, France, HOESTLANDT, H. (2) ; chromatography study, RANKE, B.

Eriphia spinifrons, distribut. French Atlantic Coast, CRISP, D. J. & FISCHER-PIETTE, E. ; *E. verrucosa* fig., HOLTHUIS, L. B. & GOTTLIEB, E.

†*Eurate crenata* fig., KANEKO, S. ; *E. crenata dentata* larval stages, figs., CHHAPGAR, B. F. (3).

Eurytium limosum fig., HOLTHUIS, L. B. (4).

Gecarcinus lateralis salt & water regulation, FLEMISTER, L. J.

Gelasimus annulipes larval stages, figs., CHHAPGAR, B. F. (3) ; *G. inversus sindensis* fig., CHHAPGAR, B. F.

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Geryon quinquedens fishing hauls, SCHROEDER, W. C.

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Glyptoxanthus vermiculatus fig., HOLTHUIS, L. B. (4).

†*Goniopetrum* **gen. nov.** [Portunidae] for *G. humgarica* Eocene, VIA, L. B.

Goniopsis cruentatus salt & water regulation, FLEMISTER, L. J. ; figs., HOLTHUIS, L. B. (4).

Grapsidae of Hawaiian Islands, keys & figs., EDMONDSON, C. H.

Grapsus grapsus tenuicristatus, *G. grapsus*, *G. strigosus*, *G. longistars* figs., EDMONDSON, C. H. ; *G. granulatus*, *G. albolineatus* figs., HOLTHUIS, L. B. (3).

†*Harpactoxanthopsis* p. 54 **gen. nov.** for *H. quadrilobata*, *H. villatae* **sp. nov.** p. 56, Eocene, VIA, L. B.

Helice crassa behaviour, figs., BEER, C. G.

Hemigrapsus nudus reproductive cycle, W. Coast America, BOOLOOTIAN, R. A., GIESE, A. C., FARMAN-FARMAIAN, A. & TUCKER, J. ; *H. penicillatus*, *H. crassimanus*, *H. sanguineus* figs., EDMONDSON, C. H. ; *H. penicillatus* fig., KOBAYAKOVA, Z. I. (1).

Hemiplax hirtipes behaviour, figs., BEER, C. G.

- Heteropanope tridentatus*, Canal de Caen, SAUDRAY, Y.
 †*Hexapus nakajimai* sp. nov. Miocene, Japan, p. 25 figs., IMAIZUMI, R.
Leptodius exaratus larval stages, figs., CHHAPGAR, B. F. (3); *L. euglyptus quadrispinosus*, p. 251, sp. nov. Saurashtra Coast, India, figs., CHHAPGAR, B. F.
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Liberonautes latyactylus figs., BOTT, R.
Lophopanopeus bellus diegensis life cycle, figs., CALIFORNIA, KNUDSEN, J. W. (1).
Macrophthalmus depressus figs., larval stages, Red Sea, AL-KHOLY, A. A.; †*M. latreillei* figs., KANEKO, S.
Macropipus depurator fig., HOLTHUIS, L. B. & GOTTLIEB, E.; *M. vernalis* hormone and light influence on erythromelanosomes, BURGERS, A. C.
Metasarma trapezium figs., EDMONDSON, C. H.
Metopograpsus messor, *M. thukuhar* figs., EDMONDSON, C. H.; *M. m.* larval stages, figs., CHHAPGAR, B. F. (3).
Micropanope rufopunctata fig., HOLTHUIS, L. B. & GOTTLIEB, E.
 †*Montezumella amenosi* p. 46, sp. nov. figs., Eocene, VIA, L. B.
Neopanope texana sayi fig., PARKER, R. H.
 †*Neptunus granulatus* figs., CAMASCHI, C. I.; *N. sanguinolentus* larval stages, figs., RAJA BAI NAIDU, K. G.; *N. (Neptunus) sanguinolentus*, *N. (N.) pelagicus* larval stages, figs., CHHAPGAR, B. F. (3).
Ocypode africana photo., DUBOIS, L.; *O. albicans* histophysiology of gill & kidney, figs., FLEMISTER, S. C.; salt & water regulation, FLEMISTER, L. J.; *O. ceratophthalma*, *O. cursor* habits, etc., photographs, ALTEVOGT, R. (5); *O. cursor* fig., HOLTHUIS, L. B. & GOTTLIEB, E.; *O. quadrata* fig., HOLTHUIS, L. B. (4).
 †*Ommatocarcinus zariquiyi* p. 58 sp. nov. figs., Eocene, VIA, L. B.
Ozius rugulosus larval stages, figs., CHHAPGAR, B. F. (3).
Pachygrapsus crassipes osmoregulation, GROSS, W. J.; reproductive cycle, W. Coast America, BOOLOOTIAN, R. A.; GIESE, A. C., FARMANFARMAIAN, A. & TUCKER, J.; *P. crassipes*, *P. marinus*, *P. minutus*, *P. plicatus*, *P. planifrons* figs., EDMONDSON, C. H.; *P. marinus* S.W. Vancouver Isl., *P. gracilis* fig., HOLTHUIS, L. B. (4); *P. marmoratus* parasitised by *Sacculina carcini* hormone study, figs., VERNET-CORNUBERT, G. (1); fig., HOLTHUIS, L. B. & GOTTLIEB, E.; distribut. French Atlantic Coast, CRISP, D. J. & FISCHER-PIETTE, E.; regeneration of pleopods, *Sacculina* infected, figs., VERNET-CORNUBERT, G. (2).
 †*Palaegrapsus guerini* p. 60 sp. nov. Eocene, figs., VIA, L. B.
Panopeus herbstii fig., HOLTHUIS, L. B. (4).
Paraxanthias taylora life cycle, figs., California, KNUDSEN, J. W. (2).
Percnon pilimanus, *P. abbreviatum*, *P. planissimum*, figs., EDMONDSON, C. H.
 †*Pilumnoplax urpiniana* p. 58 sp. nov. figs., Eocene, VIA, L. B.
Pilumnus diomedea fig., HOLTHUIS, L. B. (4).
Pinnotheres pisum biology and life history, figs., CHRISTENSEN, A. M.; *P. vicajii* p. 253 sp. nov. figs., Bombay, India, CHHAPGAR, B. F.
Plagusia depressus tuberculata, *P. immaculata*, *P. speciosa*, figs., EDMONDSON, C. H.
Planes cyaneus figs., EDMONDSON, C. H.; *P. minutus* Netherlands coast, fig., OORD, A. M. van den & HOLTHUIS, L. B.
 Portunidae, Australian coast. keys, figs., description, STEPHENSON, W. & CAMPBELL, B.
Portunus gibbsii figs., PARKER, R. H.; *P. pelagicus* coloured fig., MARSHALL, T. C., GRANT, E. M. & HAYSOM, N. M.; fig., HOLTHUIS, L. B. & GOTTLIEB, E.; *P. pelagicus*, *P. sanguinolentus*, *P. pubescens*, *P. hastatoides*, *P. tenuipes*, *P. longispinosus*, *P. brocki*, *P. emarginatus* p. 107, sp. nov. Queensland, *P. granulatus*, *P. gladiator*, *P. rubromarginatus*, *P. orbitosinus*, *P. gracilimanus* figs., STEPHENSON, W. & CAMPBELL, B.; *P. rufiremis* p. 145 sp. nov., fig., HOLTHUIS, L. B. (4); *Portunus* sp., chromatography study, RANKE, B.
 Potamonidae, West Africa, BOTT, R.
Potamocarcinus latifrons figs., HOLTHUIS, L. B. (4).
Potamonautes (Platypotamonautes) margaritarius, *P. (P.) ecorseii*, *P. (P.) triangulus* p. 1002 sp. nov. W. Africa, figs., BOTT, R.
Potamon fluvialite chromatin, sex physiology, study, etc., figs., BAFFONI, G. M.; *P. niloticus* salt & water balance, SHAW, J.
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